TECHNICAL MANUAL

Of

Intel 1037U CPU + Intel NM70 Chipset

Based Mini-ITX M/B

NO. G03-NC9T-F

Revision: 1.0

Release date: October 15, 2013

Trademark:

* **Specifications and Information contained in this documentation are furnished for information use only, and are subject to change at any time without notice, and should not be construed as a commitment by manufacturer.**

Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.

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Environmental Safety Instruction

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.

- 0 to 60 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)

- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.

- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.

- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

USER'S NOTICE

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	October 15, 2013

Item Checklist

- ☑ Motherboard
- ☑ DVD for motherboard utilities
- ☑ User's Manual
- ☑ Cable(s)
- ☑ I/O Back panel shield

Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- Intel® 1037 dual-core CPU+ Intel® NM70 express chipset
- Support 1 * DDRIII SO-DIMM 1066/1333/1600 MHz up to 8GB
- Support Mini-PCIE connector
- Support m-SATA connector
- Integrated with 24-bit dual channel LVDS header
- Support 1 * Serial ATAII (3Gb/s) & 1 * Serial ATAIII (6Gb/s) Devices
- Support HDMI and VGA Video Outputs
- Supports ACPI S3 Function
- Support CPU Smart FAN
- Support Watchdog Timer Technology
- Support Windows8 OS
- Compliance with EuP Standard

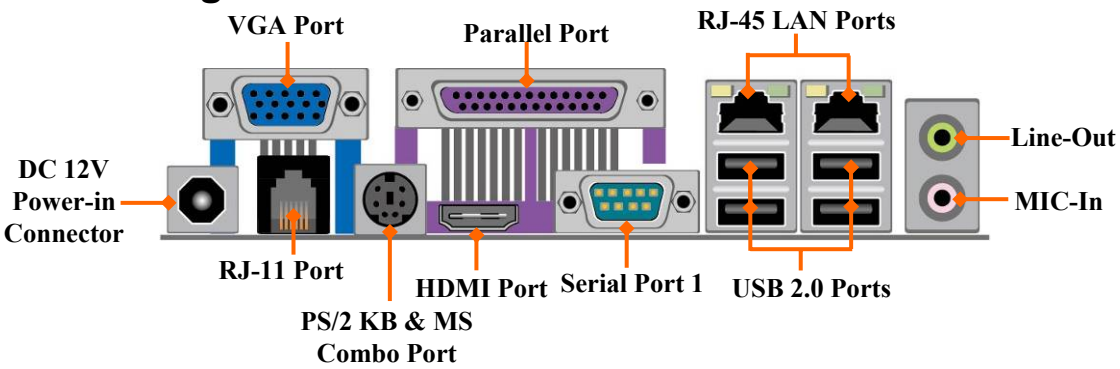
1-2 Specification

Spec	Description
Design	● Mini-ITX form factor; ● PCB size: 17.0 x 17.0 cm
Embedded CPU	● Intel® 1037U Dual Core CPU (1.8GHz)
Chipset	● Intel® NM70 Express Chipset
Memory Slot	● 1* DDRIII SO-DIMM slot ● Support DDRIII 1333/1600 MHz DDRIII SO-DIMM expandable to 8GB
Expansion Slot	● 1 * PCI Express x1 slot ● 1 * halt-size Mini-PCIE slot
Storage	● 1* SATA III 6G/s connector ● 1* SATA II 3G/s connector ● 1 * full-size M-SATA/ Mini-PCIE selectable slot
Dual LAN Chip	● Integrated with dual Realtek RTL8111G PCI-E Gigabit LAN chip ● Support Fast Ethernet LAN function of providing 10/100/1000Mbps Ethernet data transfer rate
Audio Chip	● Realtek ALC662 2-CH HD Audio Codec integrated ● Audio driver and utility included
BIOS	● 32M DIP Flash ROM
Multi I/O	***Rear Panel I/O:*** ● 1* 12V DC in power connector ● 1* RJ-11port ● 1* PS/2 keyboard & mouse combo port ● 1 * VGA port ● 1* HDMI port ● 1* serial port (COM1) ● 1* parallel port ● 4* USB 2.0/1.1 port ● 2* RJ-45 port

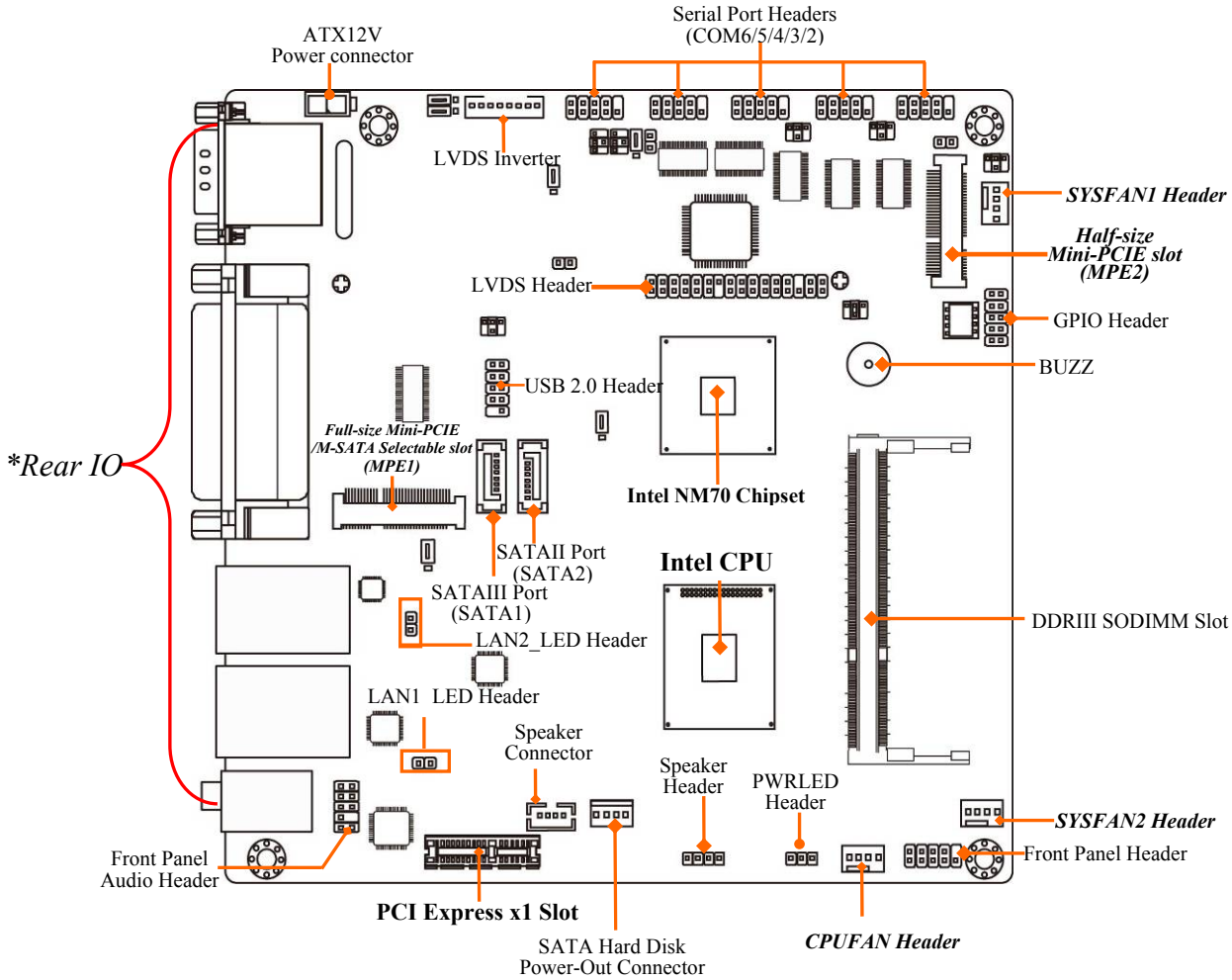
	● 1* Line-out connector ● 1* MIC connector ***Internal I/O Connectors& Headers:*** ● 1 *2-pin ATX12V internal power connector ● 1 *4-pin SATA power connector ● 3* fan connectors ● 1* speaker connector ● 1* LVDS inverter connector ● 1 * Front panel audio header ● 1* speaker header ● 1* PWRLED connector ● 1 * Front panel header ● 1 * 9-Pin USB 2.0/1.1 header for two USB 2.0/1.1 ports ● 1 *24-bit dual channel LVDS header ● 5 * serial port header ● 1 *GPIO header ● 2* LAN activity LED header

1-3 Layout Diagram

Rear IO Diagram

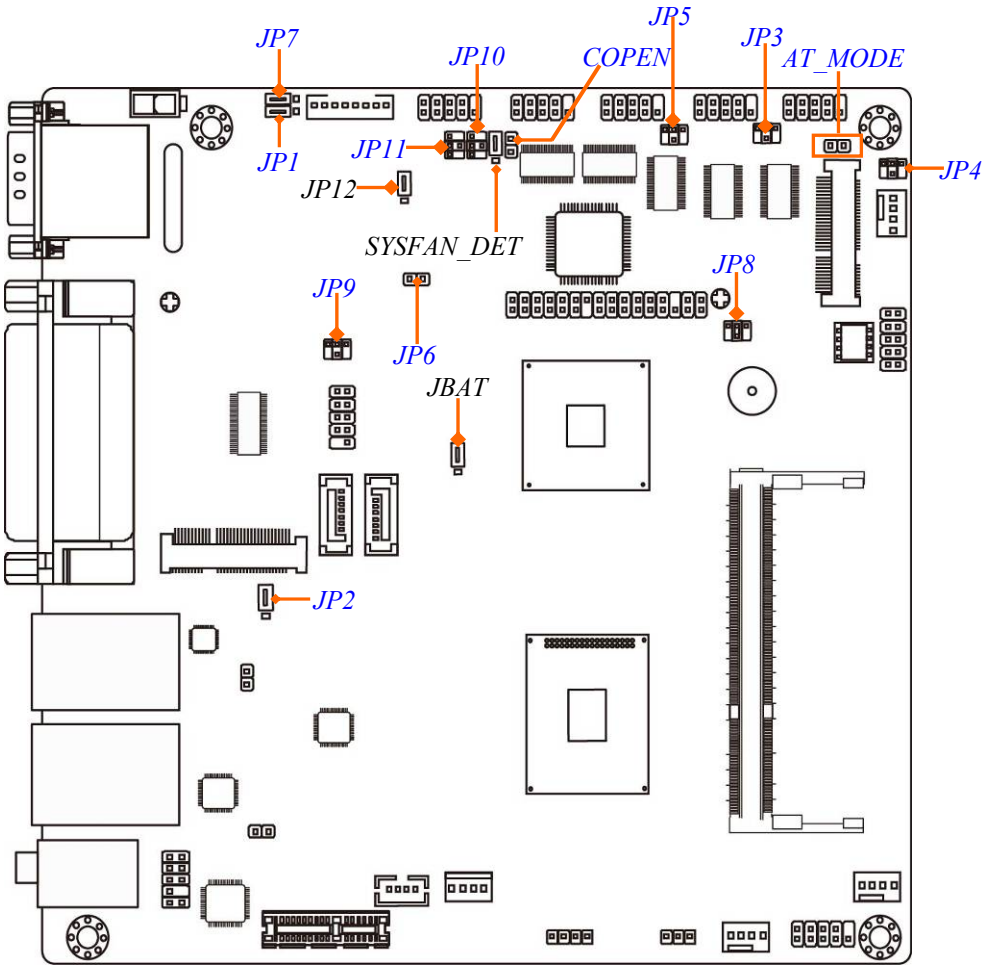


Motherboard Internal Diagram



***Rear IO:** Please refer to Page3 (Rear IO Diagram).*

Motherboard Jumper Position



Jumper

Jumper	Name	Description
JBAT	CMOS RAM Clear Function Setting	3-pin Block
SYSFAN_DET	SYSFAN1/ SYSFAN2 R.P.M. Select	3-pin Block
JP1	INVERTER Backlight VCC 5V/12V Select	3-pin Block
JP7	INVERTER Backlight Mode Select	3-pin Block
JP8	LCD VCC 3.3V/5V/12V Select	4-pin Block
JP2	Mini-PCIE & MSATA Slot (MPE1) VCC 3.3V/3VSB Select	3-pin Block
JP12	RJ-11 VCC 12V/24V Select	3-pin Block
JP9	COM1Port Pin9 Function Select	4-pin Block
JP4	COM2 Header Pin9 Function Select	4-pin Block
JP3	COM3 Header Pin9 Function Select	4-pin Block
JP5	COM4 Header Pin9 Function Select	4-pin Block
JP10	COM5 Header Pin9 Function Select	4-pin Block
JP11	COM6 Header Pin9 Function Select	4-pin Block
JP6	ME Unlock Select	2-pin Block
COPEN	Case Open Message Display Function	2-pin Block
AT_MODE	AT MODE Function Select	2-pin Block

Connectors

Connector	Name
DCIN	DC 12V Power–in Connector
RJ-11	RJ-11 Connector
PS2	PS/2 keyboard & mouse combo port
VGA	Video Graphic Attach Connector
HDMI	High-Definition Multimedia Interface
COM1	Serial Port Header
LPT	Parallel Port Header
USB1_LAN1(Middle & Bottom), USB2_LAN2(Middle & Bottom)	USB 2.0 Port Connector x4

USB1_LAN1(Top),USB2_LAN2(Top)	RJ-45 LAN Connector x2
AUDIO(Top)	Audio Line Out Connector
AUDIO(Bottom)	Audio MIC Connector
ATXPWR	12V Power-in Connector
SATAPW	SATA Power out Connector
SATA1	SATAIII Connector
SATA2	SATAII Connector
MPE1	Full-size MSATA/Mini-PCIE Connector
MPE2	Half-size Mini-PCIE Connector
SYSFAN1,SYSFAN2,CPUFAN	FAN Connector X3
SPEAK	Speaker Connector
INVERTER	LVDS Inverter Connector

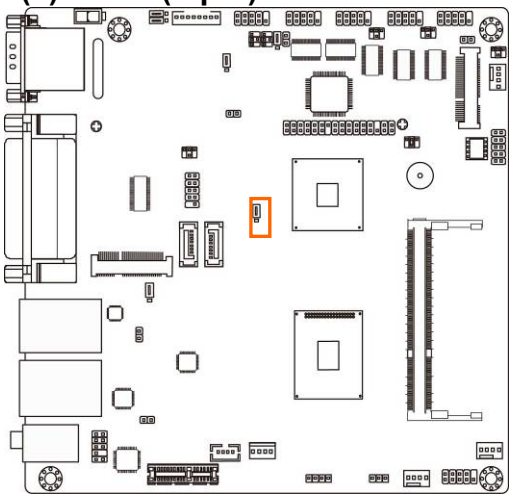
Headers

Header	Name	Description
FP_AUDIO	Front Panel Audio Header	9-pin Block
FP	Front Panel Header(PWR LED/ HD LED/Power Button /Reset)	9-pin Block
SPEAK1	Speaker Header	4-pin Block
PWRLED	PWRLED Header	3-pin Block
FP_USB	USB 2.0 Port Header	9-pin Block
LVDS	LVDS Header	30-pin Block
COM2/3/4/5/6	Serial Port Header X5	9-pin Block
GPIO	GPIO Header	10-pin block
LAN1_LED,LAN2_LED	LAN Activity LED Header x2	2-pin Block

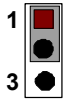
Chapter 2
Hardware Installation

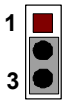
2-1 Jumper Setting

(1) JBAT (3-pin): CMOS RAM Clear Function Setting



JBAT

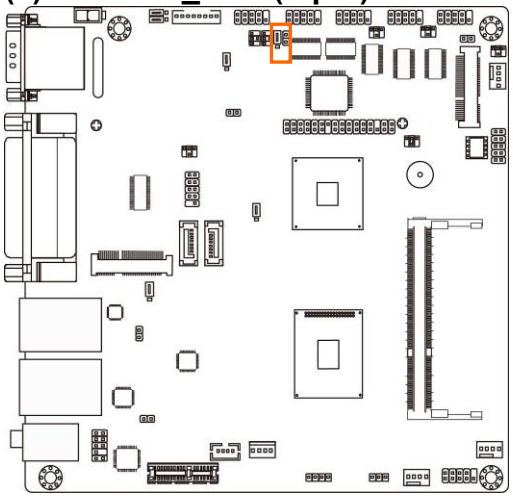




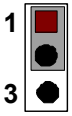
1-2 Closed： Normal； 2-3 Closed：Clear CMOS

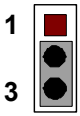
CMOS Clear Setting

(2) SYSFAN_DET (3-pin): SYSFAN1/SYSFAN2 R.P.M. Select



SYSFAN_DET

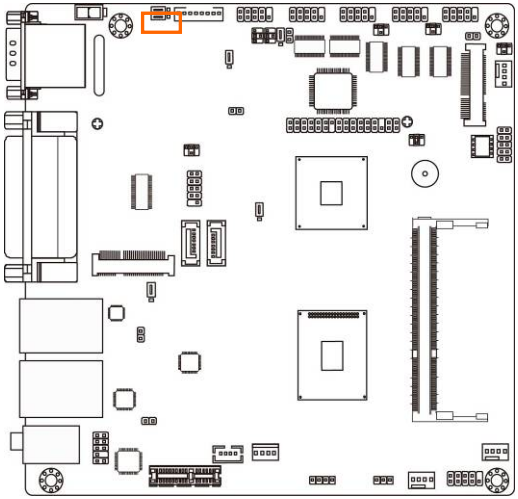




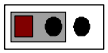
1-2 Closed：
SYSFAN1 R.P.M. Selected;

2-3 Closed：
SYSFAN2 R.P.M. Selected.

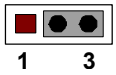
(3) JP1 (3-pin): INVERTER Back Light VCC 5V /12V Select



JP1→INVERTER Back Light VCC

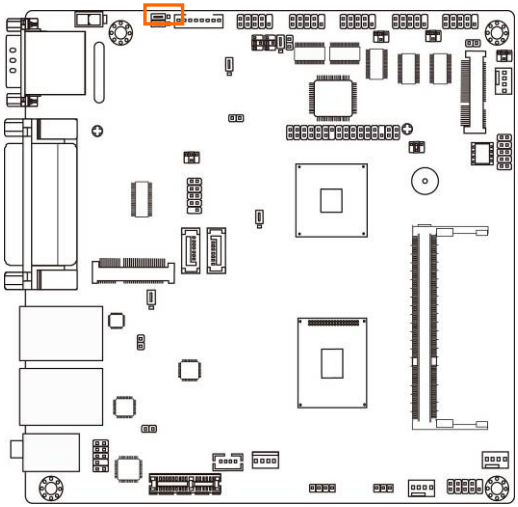


1-2 Closed: Back Light VCC=5V;

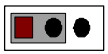


2-3 Closed: Back Light VCC=12V.

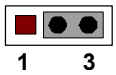
(4) JP7 (3-pin): INVERTER Back Light Mode Select



JP7→INVERTER Back Light Mode

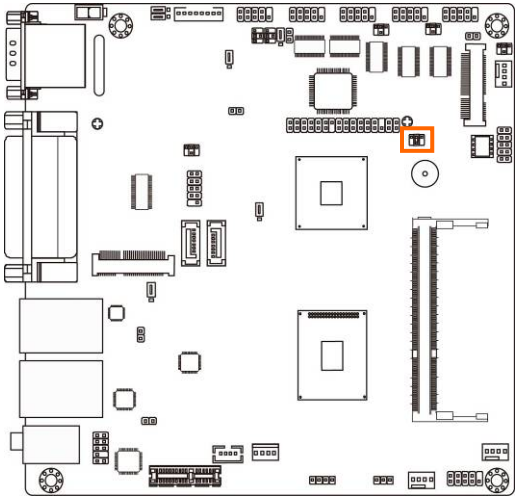


1-2 Closed: Back Light PWM Mode Selected;

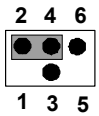


2-3 Closed: Back Light DC Mode Selected.

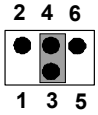
(5) JP8 (4-pin): LCD Back Light VCC 3.3V/5V/12V Select



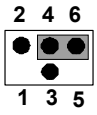
JP8→LCD Back Light VCC



2-4 Closed: LVDS VCC= 3.3V

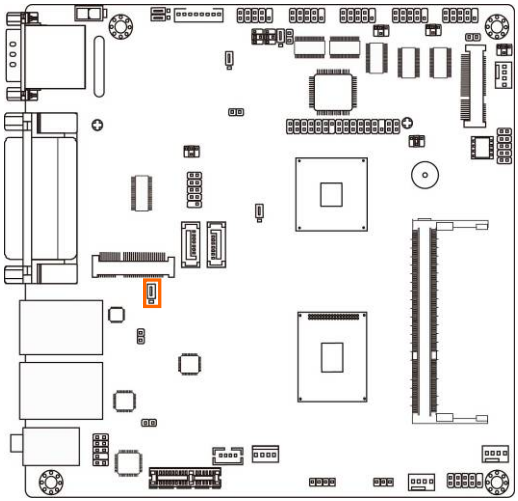


3-4 Closed: LVDS VCC= 5V;

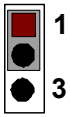


4-6 Closed: LVDS VCC= 12V;

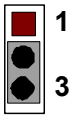
(6) JP2 (3-pin): MINI-PCIE & MSATA Slot (MPE1) VCC3.3V/ 3.3VSB Select



JP2→MPE1 Slot VCC

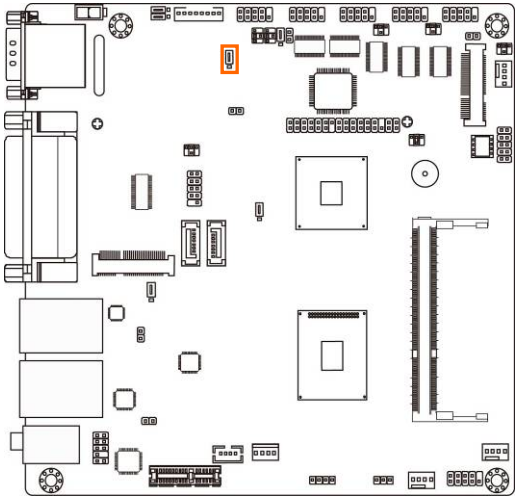


1-2 Closed: MPE1 Slot VCC= 3.3V;

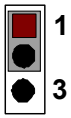


2-3 Closed: MPE1 Slot VCC=3VSB

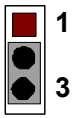
(7) JP12 (3-pin): RJ-11 VCC 12V/24V Select



JP12→RJ-11 VCC

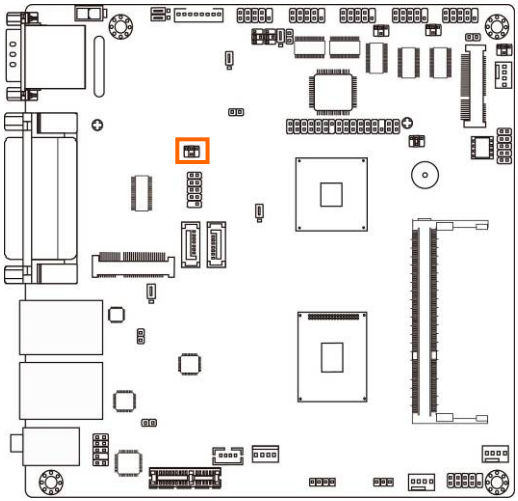


1-2 Closed: RJ11 VCC= 12V;

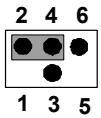


2-3 Closed: RJ11 VCC= 24V.

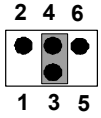
(8) JP9 (4-pin): COM1 Port Pin9 Function Select



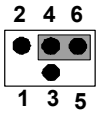
JP9→COM1 Port



2-4 Closed:
RI=RS232

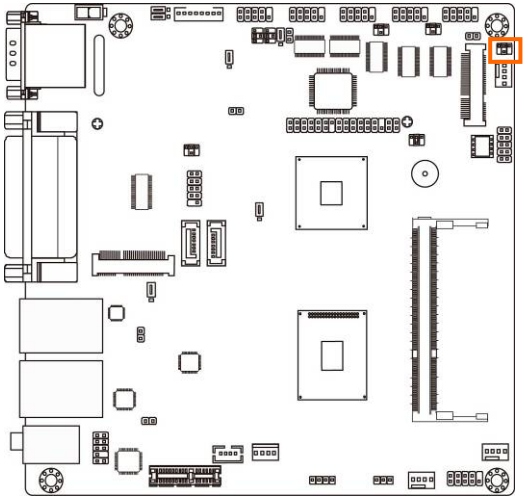


3-4 Closed:
RI= 5V;

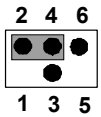


4-6 Closed:
RI= 12V;

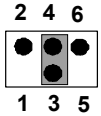
(9) JP4 (4-pin): COM2 Header Pin9 Function Select



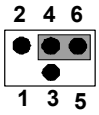
JP4→COM2 Header



2-4 Closed:
RI=RS232

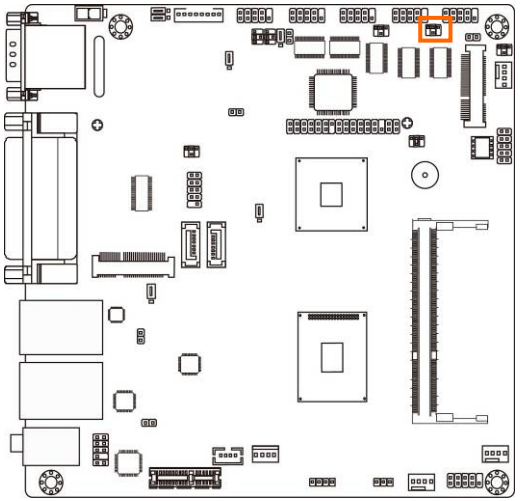


3-4 Closed:
RI= 5V;

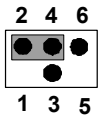


4-6 Closed:
RI= 12V;

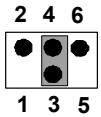
(10) JP3 (4-pin): COM3 Header Pin9 Function Select



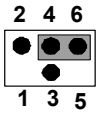
JP3→COM3 Header



2-4 Closed:
RI=RS232

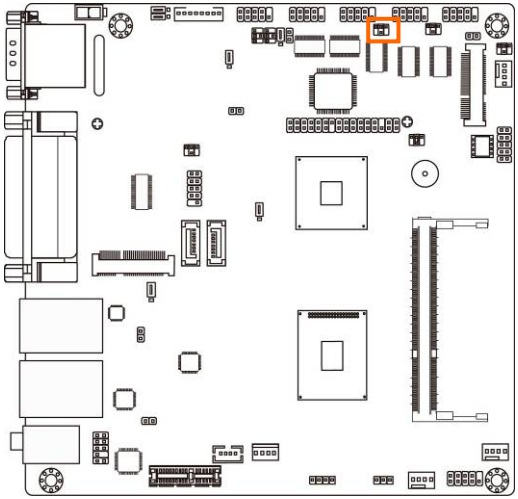


3-4 Closed:
RI= 5V;

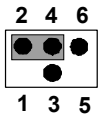


4-6 Closed:
RI= 12V;

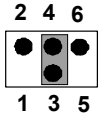
(11) JP5 (4-pin): COM4 Header Pin9 Function Select



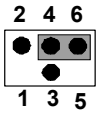
JP5→COM4 Header



2-4 Closed:
RI=RS232

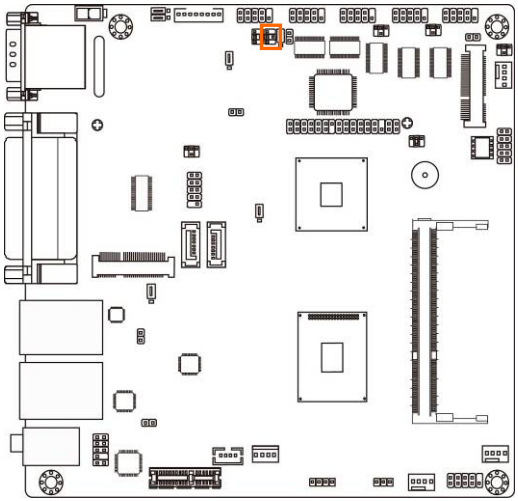


3-4 Closed:
RI= 5V;

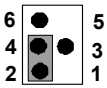


4-6 Closed:
RI= 12V;

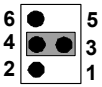
(12) JP10 (4-pin): COM5 Header Pin9 Function Select



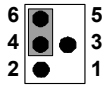
JP10→COM5 Header



2-4 Closed:
RI=RS232

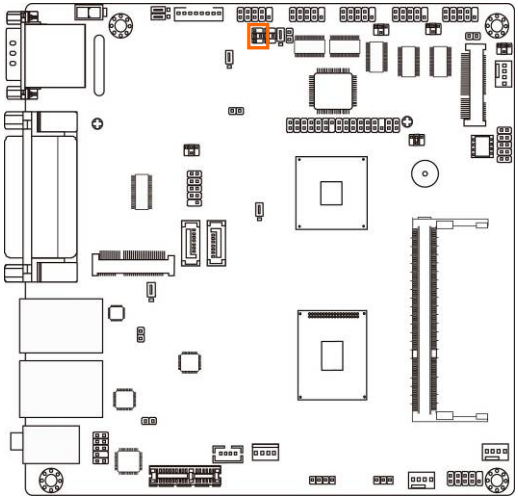


3-4 Closed:
RI= 5V;

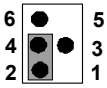


4-6 Closed:
RI= 12V.

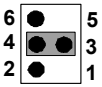
(13) JP11 (4-pin): COM6 Header Pin9 Function Select



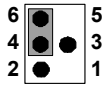
JP11→COM6 Header



2-4 Closed:
RI=RS232

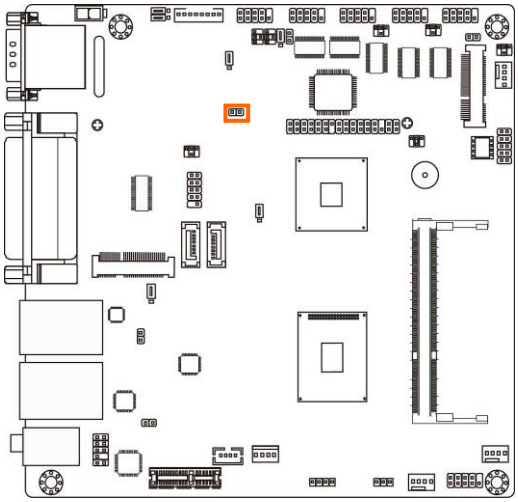


3-4 Closed:
RI= 5V;



4-6 Closed:
RI= 12V.

(14)JP6 (2-pin): ME Unlock Select

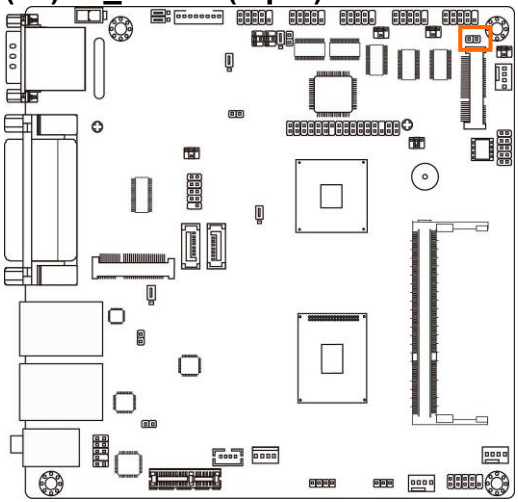


JP6

1-2 Open:Normal ;

1-2 Closed:ME Unlocked.

(15)AT_MODE (2-pin): AT Mode Function Select



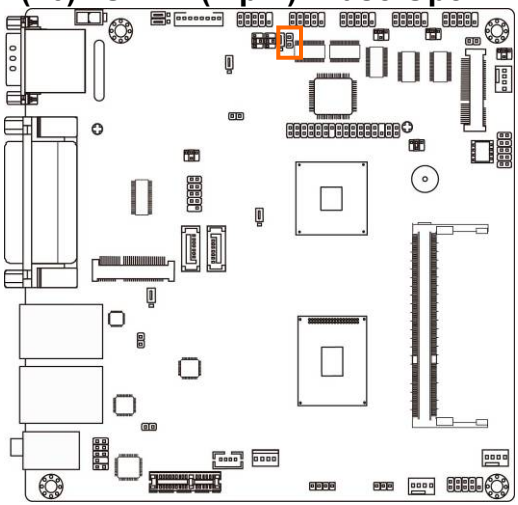
AT_MODE

1-2 Open: ATX Mode Selected;

1-2 Closed: AT Mode Selected;

Pin 1-2 closed: AT_MODE function is enabled. User needs to restart the system for the settings to take effect. In this case your computer will automatically turns on when power supply resumes.

(16)COPEN (2-pin): Case Open Message Display Function Select



COPEN

1-2 Open: Normal;

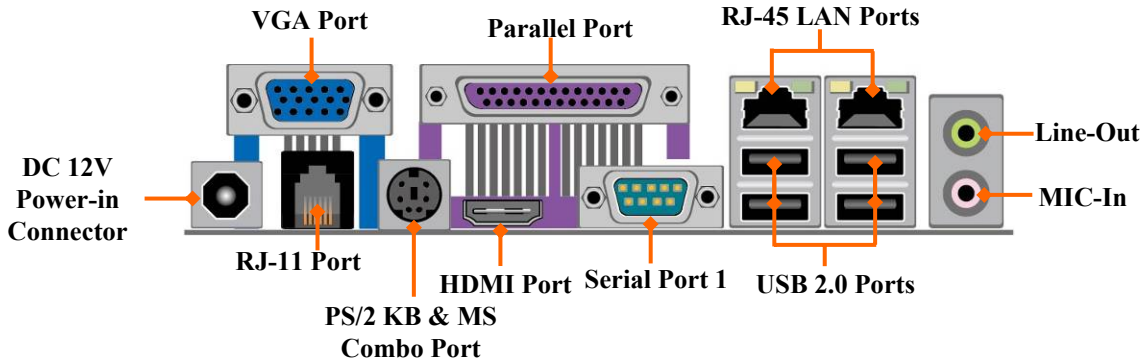
1-2 Closed : Case Open Function Selected.

Pin 1-2 Closed: Case open display function enabled. Use needs to enter BIOS and enable 'Case Open Detect' function. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.

2-2 Connectors and Headers

2-2-1 Connectors

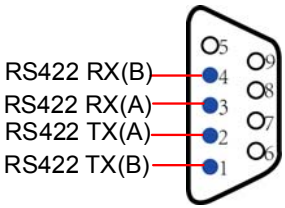
(1) Rear IO Connectors



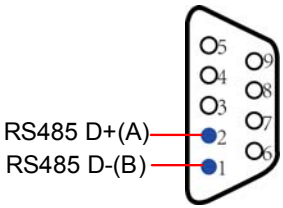
(2) COM1 (9-pin block):

COM1 port can function as RS232/422/485 port. In normal settings this port functions as RS232 port.

User need to go to BIOS to select COM1 function mode at first, before using specialized cable to connect different pin of this port.

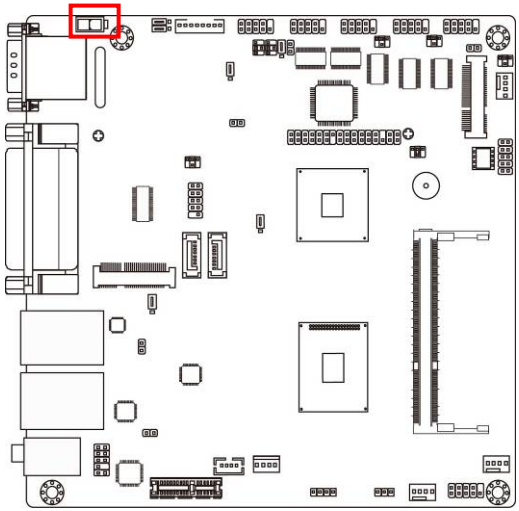


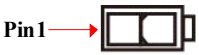
For RS422 Mode



For RS485 Mode

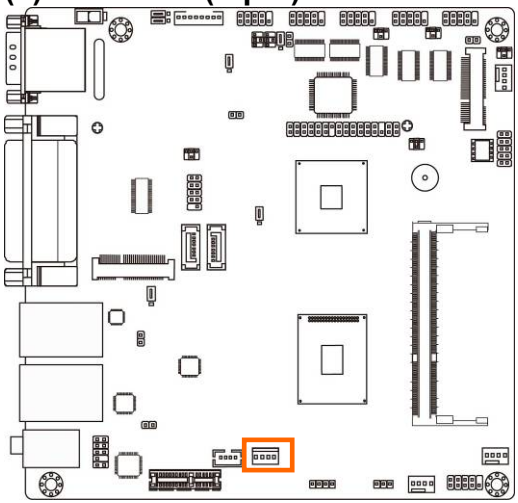
(3) ATXPWR (2-pin block): DC12V Power-in Connector

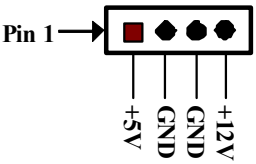




Pin No.	Definition
1	GND
2	+12V DC_IN

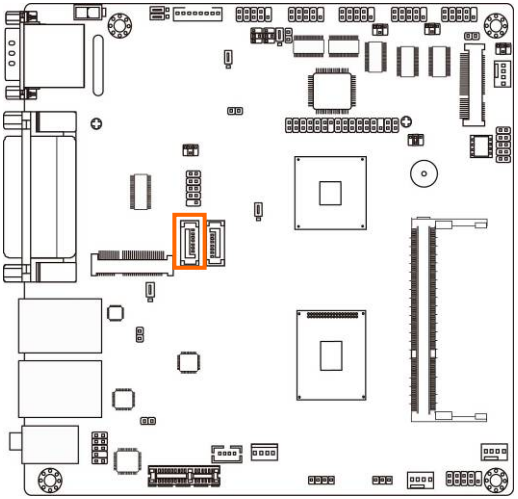
(4) SATAPW (4-pin):SATA Hard Disk Power-out Connector



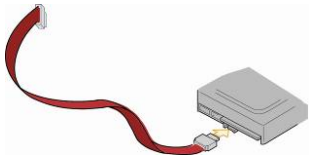


(5) SATA1: SATAIII Port connector

This connector is a high-speed SATAIII port that supports 6 GB/s transfer rate.

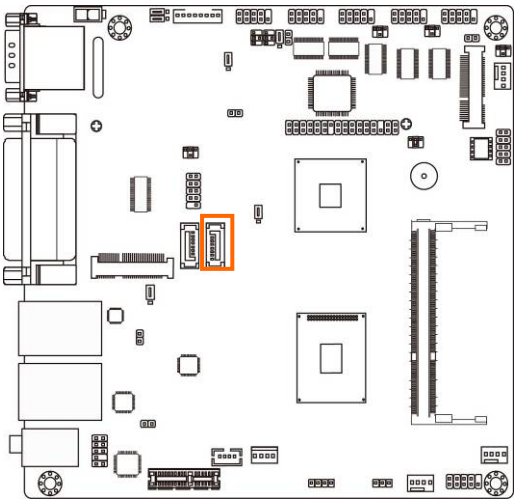


Pin No.	Defnition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

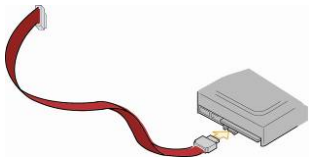


(6) SATA2:SATAII Port connector

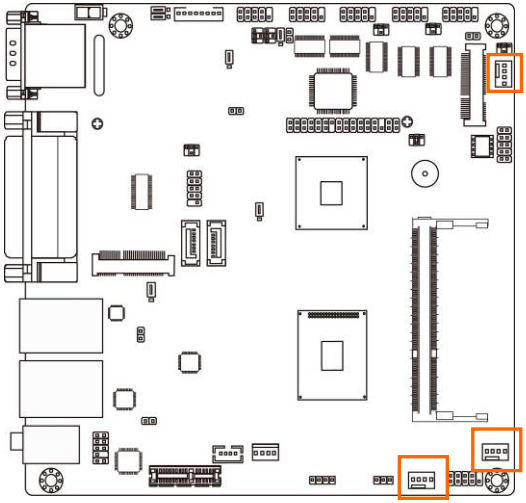
This connector is a high-speed SATAII port that supports 3 GB/s transfer rate.

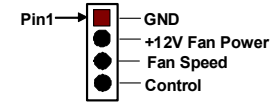


Pin No.	Defnition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

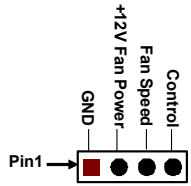


(7) CPUFAN (4-pin)/SYSFAN1 (4-pin) /SYSFAN2 (4-pin): FAN Headers



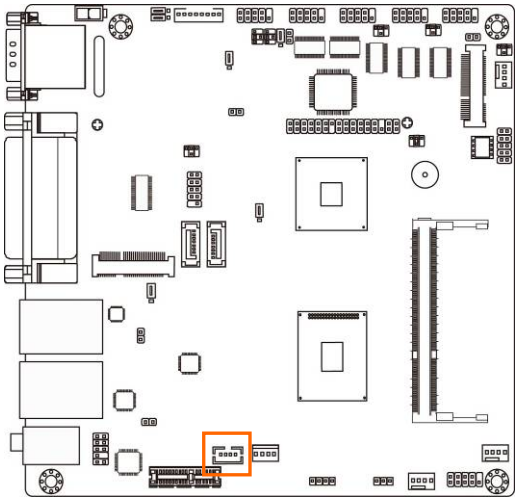


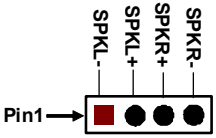
SYSFAN1



CPUFAN/SYSFAN2

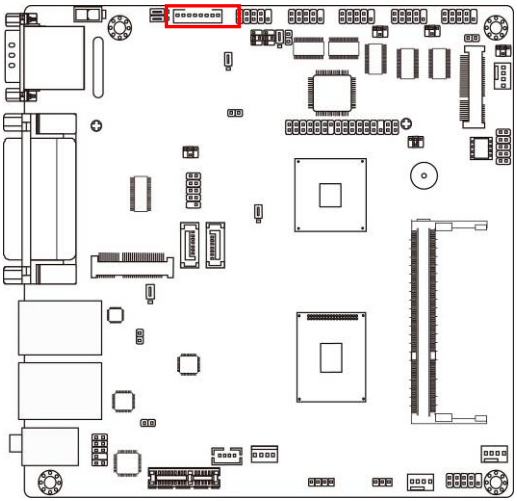
(8) SPEAK (4-pin): Speaker Connector





SPEAK

(9) INVERTER (8-Pin): LVDS Inverter Connector



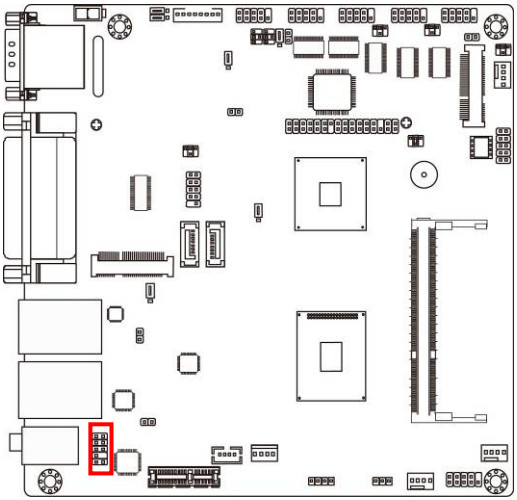
INVERTER

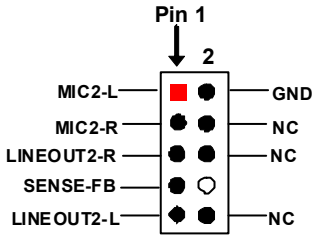
Pin No.	Definition
1	Backlight Enable
2	Backlight Duty
3	Backlight Power
4	Backlight Power
5	GND
6	GND
7	Backlight+ SW
8	Backlight- SW

2-2-2 Headers

(1) FP_AUDIO (9-pin): Line-Out, MIC-In Header

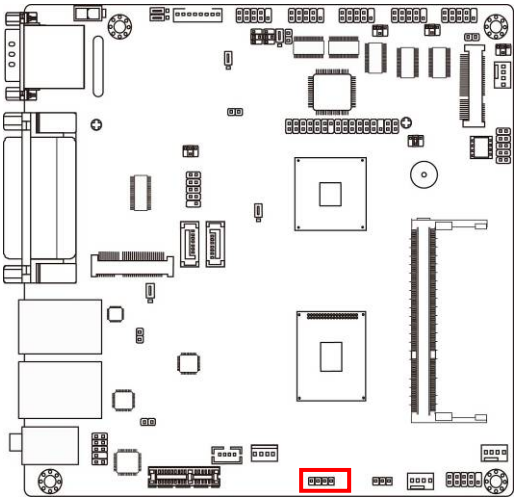
This header connects to Front Panel Line-out, MIC-In connector with cable.

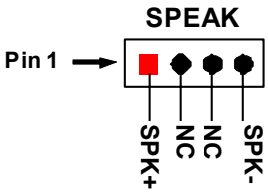




(2) SPEAK1 (4-pin): Speaker Header

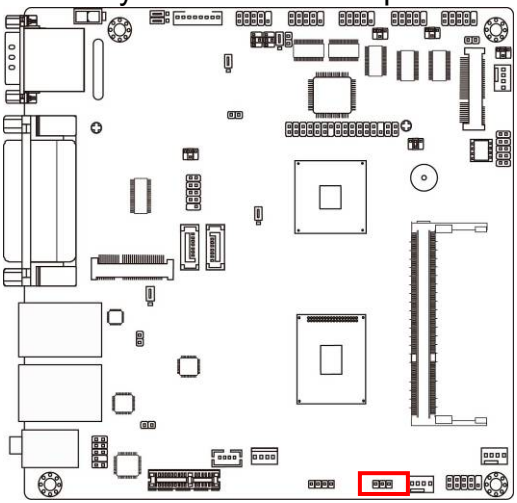
This 4-pin header connects to the case-mounted speaker. See the figure above.

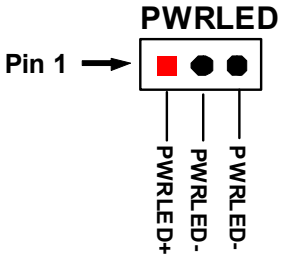




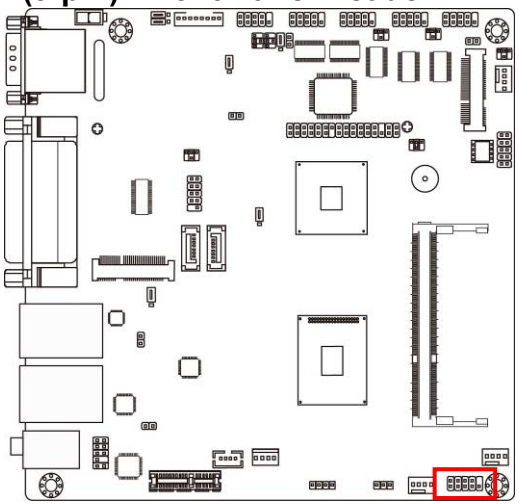
(3) PWR LED (3-pin): Power LED Header

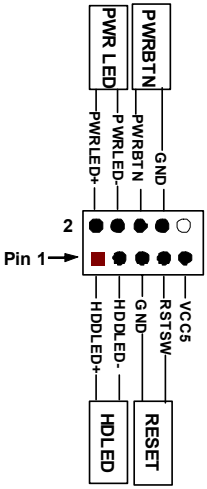
The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin header.



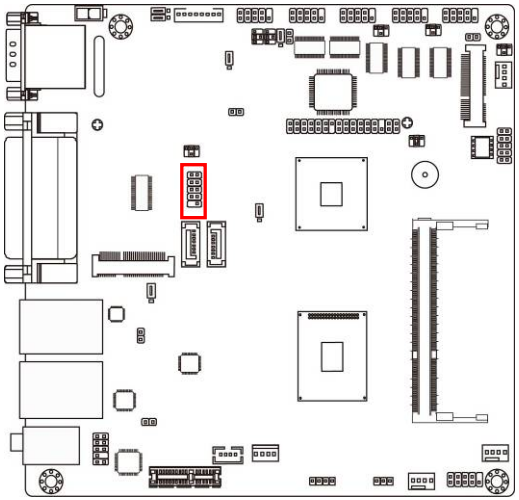


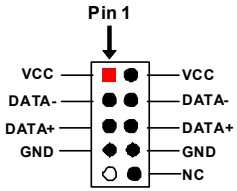
(4) FP (9-pin): Front Panel Header



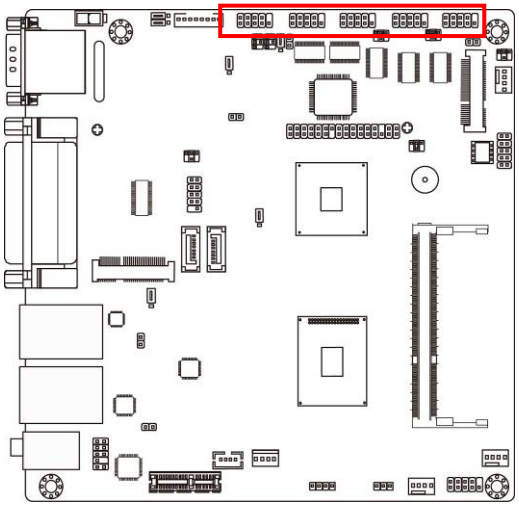


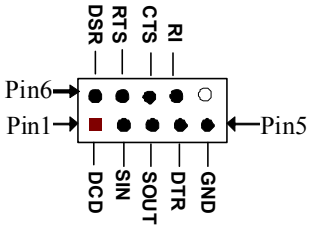
(5) F_USB (9-pin): USB 2.0 Port Header





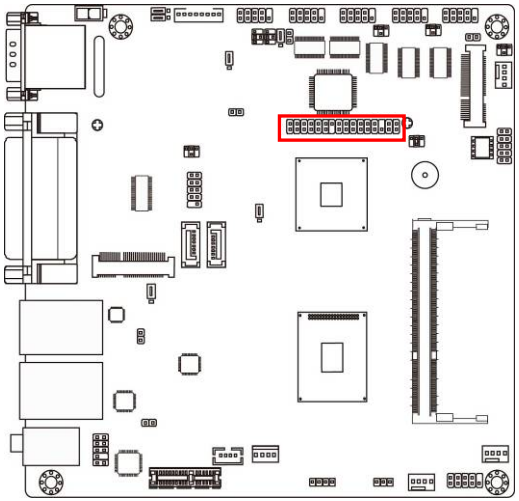
(6) COM2/3/4/5/6 (9-Pin): Serial Port Headers

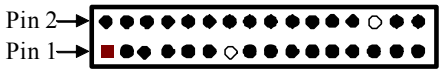




Serial Port Header

(7) LVDS (30-Pin): 24-bit dual channel LVDS Header

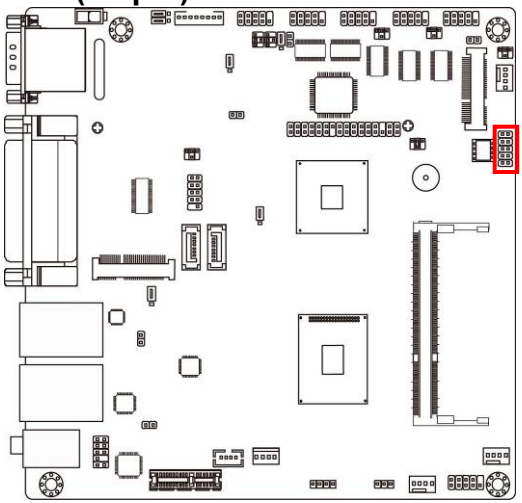


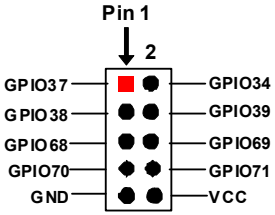


LVDS Header

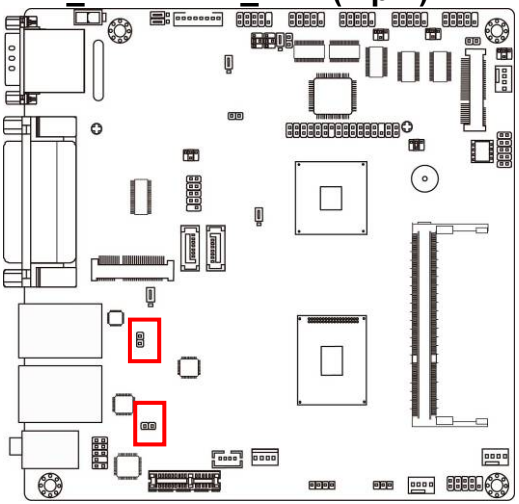
Pin NO.	Pin Define	Pin NO.	Pin Define
Pin 1	LVDSB_DATAN3	Pin 2	LVDSB_DATAP3
Pin 3	LVDS_CLKBN	Pin 4	LVDS_CLKBP
Pin 5	LVDSB_DATAN2	Pin 6	LVDSB_DATAP2
Pin 7	LVDSB_DATAN1	Pin 8	LVDSB_DATAP1
Pin 9	LVDSB_DATAN0	Pin 10	LVDSB_DATAP0
Pin 11	LVDS_DDC_DATA	Pin 12	LVDS_DDC_CLK
Pin 13	NA	Pin 14	GND
Pin 15	GND	Pin 16	GND
Pin 17	LVDSA_DATAP3	Pin 18	LVDSA_DATAN3
Pin 19	LVDS_CLKAP	Pin 20	LVDS_CLKAN
Pin 21	LVDSA_DATAP2	Pin 22	LVDSA_DATAN2
Pin 23	LVDSA_DATAP1	Pin 24	LVDSA_DATAN1
Pin 25	LVDSA_DATAP0	Pin 26	LVDSA_DATAN0
Pin 27	PVDD	Pin 28	NA
Pin 29	PVDD	Pin 30	PVDD
Pin 31	GND	Pin 32	GND

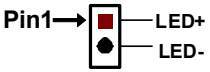
(8) GPIO1 (10-pin): GPIO Header



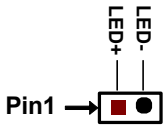


(9) LAN1_LED/LAN2_LED (2-pin): LAN Activity LED Header





LAN2_LED



LAN1_LED

Chapter 3
Introducing BIOS

Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version form our official website.

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

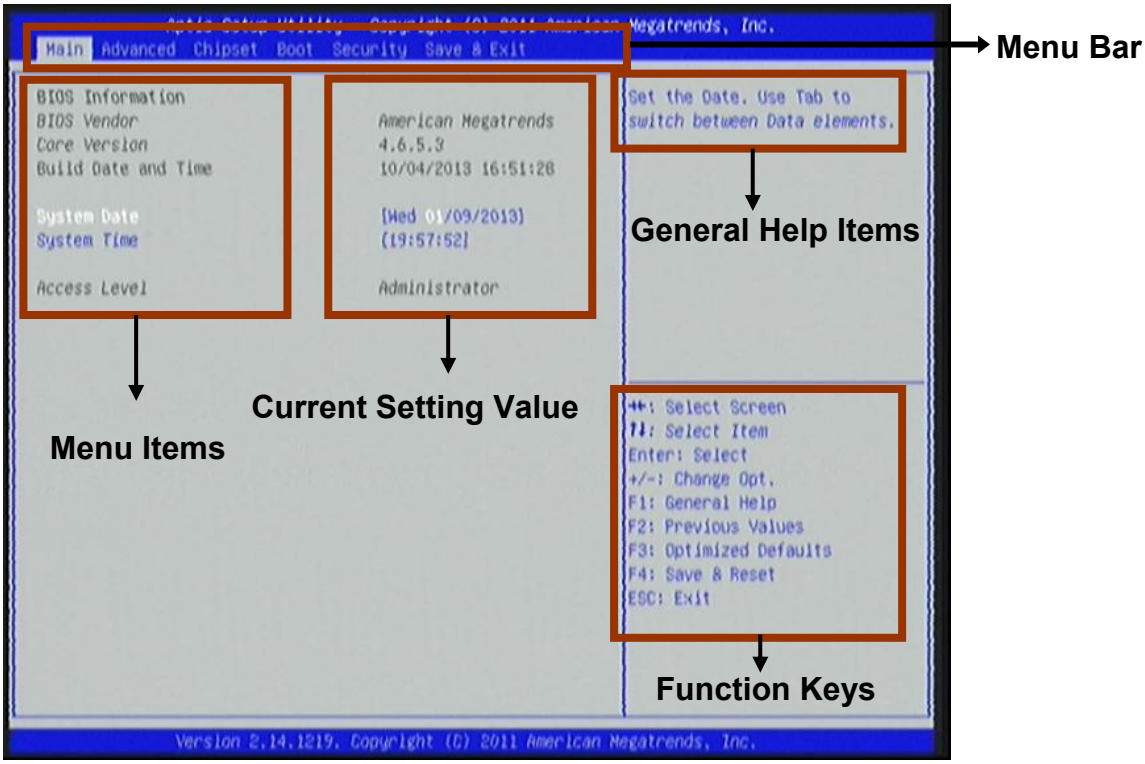
3-1 Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press **<Del>** to enter Setup

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



BIOS Menu Screen

3-3 Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.

- Press <Enter> to select.
- Press <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous value.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

3-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press **<Esc>**.

3-5 Menu Bars

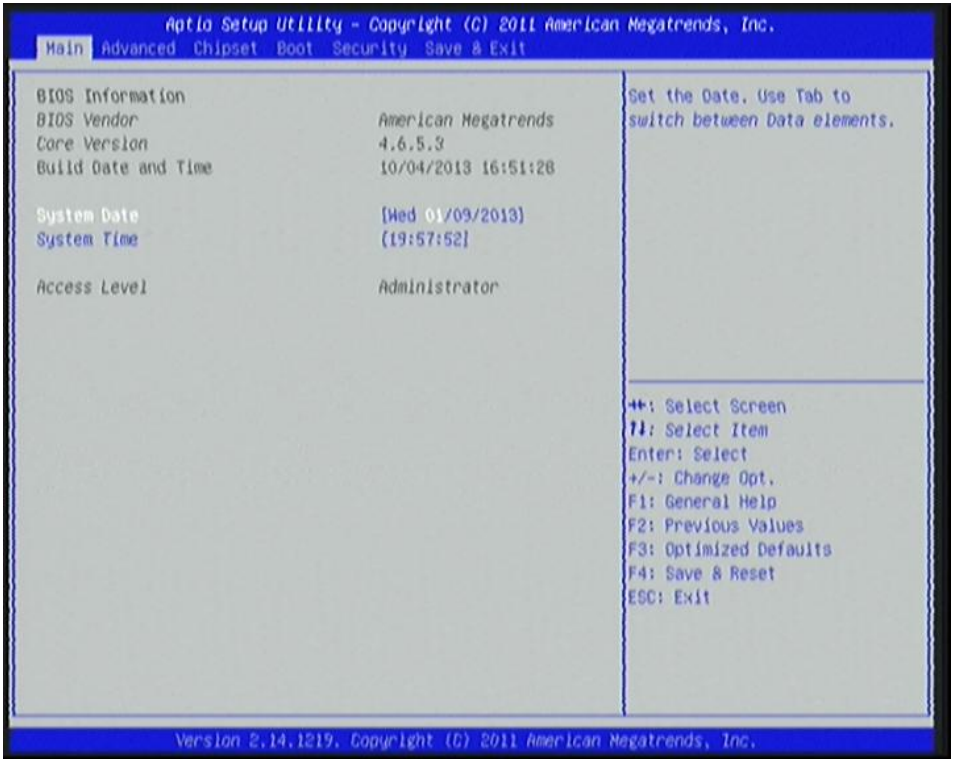
There are seven menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Boot	To change boot settings
Security	Password settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.



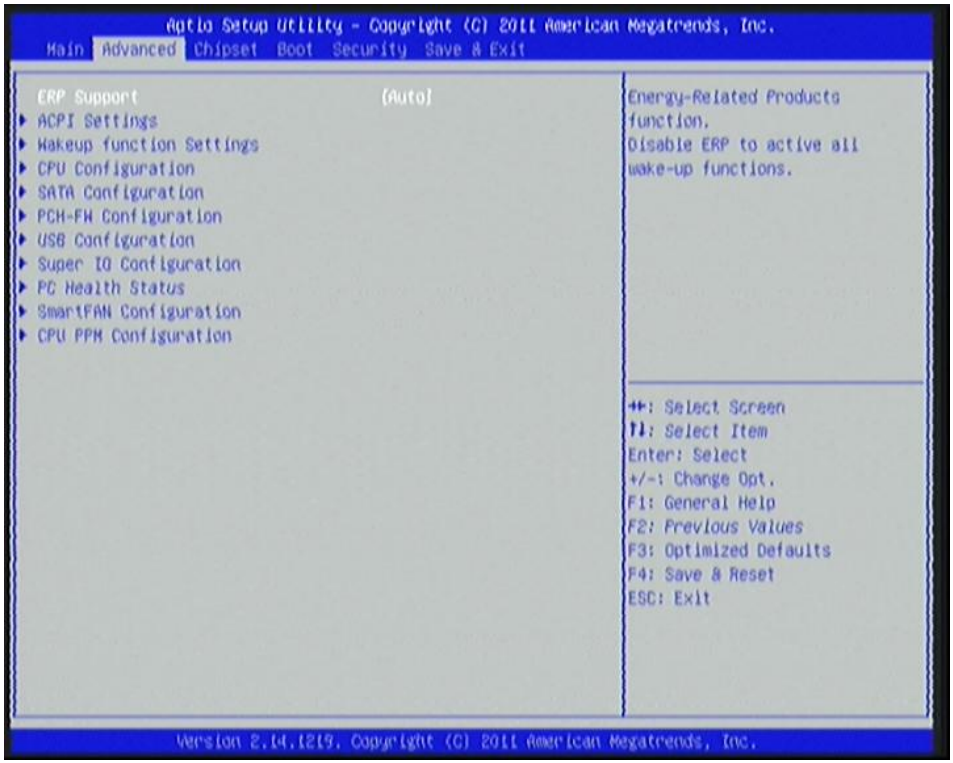
System Date

Set the date. Please use [Tab] to switch between data elements.

System Time

Set the time. Please use [Tab] to switch between time elements.

3-7 Advanced Menu



ERP Support

The optional settings: [Enabled]; [Disabled].

Use this item to enable or disable Energy-Related Products function for this board. This item should be set as [Disabled] to activate all wake-up functions.

ACPI Settings

Press [Enter] to make settings for the following sub-items:

ACPI Settings

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the suspend button is pressed.

The optional settings are: [Suspend Disabled]; [S3 only (Suspend to RAM)].

Wakeup function Settings

Press [Enter] to make settings for the following sub-items:

Wake System with Fixed Time

Use this item to enable or disable system wake on alarm event. When set as [Enabled], system will wake on the hour/min/sec specified.

PS2 KB/MS Wakeup

The optional settings: [Enabled]; [Disabled].

Use this function to enable or disable PS/2 keyboard and mouse device to wake up from S3/S4/S5.

This function is supported when EUP Function is set as [Disabled].

USB S3/S4 Wakeup

The optional settings: [Enabled]; [Disabled].

Use this function to enable or disable USB device to wake up from S3/S4.

This function is supported when EUP Function is set as [Disabled].

CPU Configuration

Press [Enter] to view current CPU information and make settings for the following sub-items:

Limit CPUID Maximum

The optional settings: [Enabled]; [Disabled].

Set as [Disabled] for Windows XP.

Execute Disable Bit

The optional settings: [Enabled]; [Disabled].

Intel Virtualization Technology

The optional settings: [Enabled]; [Disabled].

When set as [Enabled], a VHM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Hardware Prefetcher

Use this item to turn on/off the middle level cache (L2) streamer prefetcher.

The optional settings: [Enabled]; [Disabled].

Adjacent Cache Line Prefetch

Use this item to turn on/off prefetching of adjacent cache lines.

The optional settings: [Enabled]; [Disabled].

SATA Configuration
Press [Enter] to make settings for the following sub-items:
SATA Controller(s)
Use this item to enable or disable SATA device.
The optional settings: [Enabled]; [Disabled].
SATA Mode Selection
Use this item to determine how SATA controller(s) operate.
The optional settings are: [IDE]; [AHCI].
When set as [IDE**], user can make further settings in ' **IDE Legacy / Native Mode Selection'***
IDE Legacy / Native Mode Selection
The optional settings are: [Native]; [Legacy].
For SATA device support Legacy OS (Like Dos), Please select [Legacy] for compatible.
When set as [AHCI**], user can also make further settings for each available SATA (1/2) port or MINISATA port:*

Serial ATA Port 1/2/mSATA

(Serial ATA Port 1/2/mSATA) Port Support

Use this item to enable or disable each SATA port.

The optional settings: [Disabled]; [Enabled].

(Serial ATA Port 1/2) Hot Plug

Use this item to designate this port as Hot Pluggable.

The optional settings: [Disabled]; [Enabled].

PCH-FW Configuration
Press [Enter] to go to '**Firmware Update Configuration**' to enable or disable '**ME FW Image Re-Flash** 'function.

USB Configuration
Press [Enter] to make settings for the following sub-items:
Legacy USB Support
The optional settings are: [Enabled]; [Disabled]; [Auto].
[Enabled]: To enable legacy USB support.

[Auto]: To disable legacy support if no USB devices are connected.
[Disabled]: to keep USB devices available only for EFI specification,

EHCI Hand-off

This is workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
The optional settings are: [Disabled]; [Enabled].

USB Mass Storage Driver Support

The optional settings are: [Disabled]; [Enabled].

Port 60/64 Emulation

Use this item to enable I/O 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USWB aware OSes.
The optional settings are: [Disabled]; [Enabled].
USB hardware delays and time-outs:
USB transfer time-out
Use this item to set the time-out value for control, bulk, and interrupt transfers.
The optional settings are: [1 sec]; [5 sec]; [10 sec]; [20 sec].
Device reset time-out
Use this item to set USB mass storage device start unit command time-out.
The optional settings are: [10 sec]; [20 sec]; [30 sec]; [40 sec].

Device power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller.
The optional settings are: [Auto]; [Manual].
'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor. Select [Manual] you can set value for the following sub-item: **Device Power-up delay in seconds,** the delay range in from 1 to 40 seconds, in one second increments.

Super I/O Configuration

Press [Enter] to make settings for the following sub-items:

Super IO Configuration

Serial Port 1 Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Transmission Mode Select

The optional settings are: [RS422]; [RS232]; [RS485].

Serial Port FIFO Mode

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

Serial Port 2 Configuration/Serial Port 3 Configuration / Serial Port 4 Configuration/Serial Port 5 Configuration/Serial Port 6 Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

Change Settings

Use this item to select an optimal setting for super IO device.

Serial Port FIFO Mode

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128-Byte FIFO].

Parallel Port Configuration

Press [Enter] to make settings for the following items:

Parallel Port Configuration

Parallel Port

Use this item to enable or disable parallel port (LPT/LPTE).

Change Settings

Use this item to select an optimal setting for super IO device.

Device Mode

Use this item to change the printer port mode.

The optional settings are: [STD Printer Mode]; [SPP Mode]; [EPP 1.9 and SPP Mode]; [EPP 1.7 and SPP Mode]; [ECP Mode]; [ECP and EPP 1.9 Mode]; [ECP and EPP 1.7 Mode].

WatchDog Timer

Use this item to enable or disable WatchDog Timer Control. When set as [Enabled], the following sub-items shall appear:

WatchDog Timer Value
User can set a value in the range of 4 ~255.
WatchDog Timer Unit
The optional settings are: [Min.]; [Sec.].
ATX Power Emulate AT Power
This item will show current AT Mode is enabled or disabled.
***Note**: User needs to reset the system for the settings to take effect after setting Pin 1-2 of AT_MODE jumper as closed.*
Case Open Detect
Use this item to detect case has already open or not, show message in POST.
The optional settings are: [Disabled]; [Enabled].

PC Health Status
Press [Enter] to view current PC health status and make settings for:
Shutdown Temperature
Use this item to select system shutdown temperature.
The optional settings are: [Disabled]; [70C/158F]; [75C/164F] [80C/172F]; [85C/180F]; [90C/188F].

SmartFAN Configuration
Press [Enter] to make settings for SmartFan Configuration:
SmartFAN Configuration
CPUFAN Type
The optional settings are: [4 pin]; [3 pin].
SYSFAN1 Type
The optional settings are: [4 pin]; [3 pin].
SYSFAN2 Type
SYSFAN2 only support [4 pin] type.

Note: 'Smart Mode' is not supported when the [3 pin] type is selected.

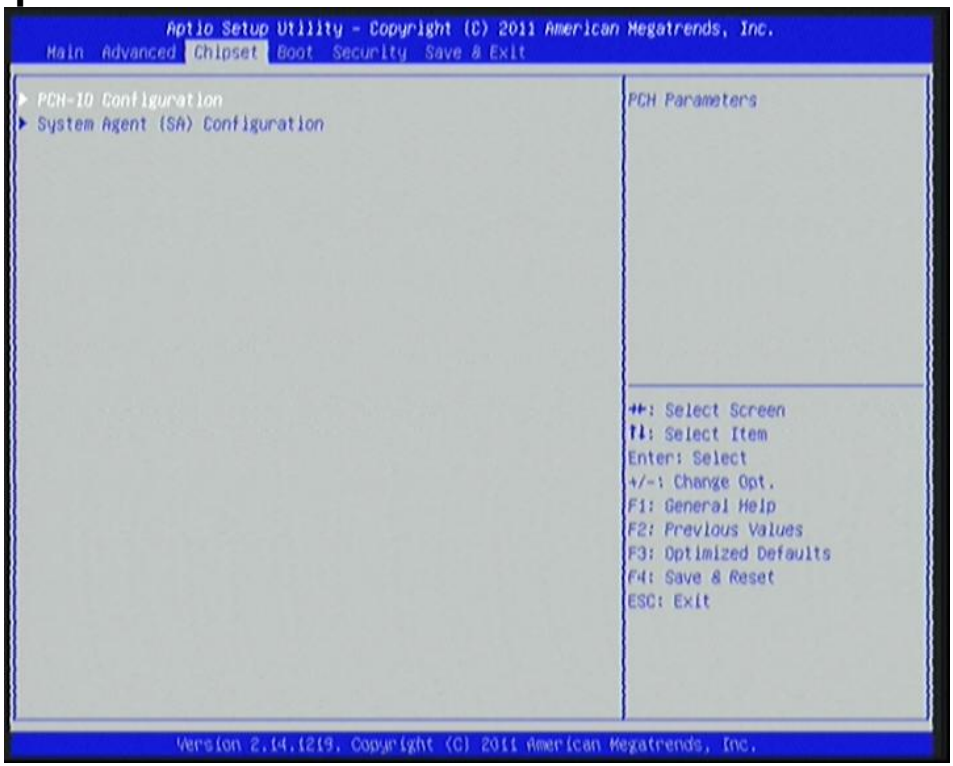
CPUFAN / SYSFAN1/SYSFAN2 Smart Mode
When set as [Enabled], the following sub-items shall appear:
CPUFAN / SYSFAN1/SYSFAN2 Full-Speed Temperature
Use this item to set CPUFAN/SYSFAN1/SYSFAN2 full speed temperature. Fan will run at full speed when above this temperature.

CPUFAN / SYSFAN1/SYSFAN2 Full-Speed Duty
Use this item to set CPUFAN/SYSFAN1/SYSFAN2 full speed duty. Fan will run at full speed when above the pre-set duty.
CPUFAN / SYSFAN11/SYSFAN2 Idle-Speed Temperature
Use this item to set CPUFAN/SYSFAN1/SYSFAN2 idle speed temperature. Fan will run at idle speed when below this temperature.
CPUFAN / SYSFAN1/SYSFAN2 Idle-Speed Duty
Use this item to set CPUFAN/SYSFAN1/SYSFAN2 idle speed duty. Fan will run at idle speed when below the pre-set duty.

CPU PPM Configuration
Press [Enter] to make settings for CPU PPM Configuration:
CPU PPM Configuration:

EIST
Use this item to enable or disable Intel SpeedStep.
CPU C3 Report
Use this item to enable or disable CPU C3 (ACPI C2) report to OS.
CPU C6 Report
Use this item to enable or disable CPU C6 (ACPI C3) report to OS.

3-8 Chipset Menu


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
PCH-IO Configuration
System Agent (SA) Configuration
PCH Parameters
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

PCH-IO Configuration

Press [Enter] to make settings for the following sub-items:

USB Devices Configuration

Press [Enter] to further setting USB device configuration.

EHCI1/EHCI2

Use this item to control the USB EHCI (USB 2.0) functions.
One EHCI controller must always be enabled.

Onboard LAN1 Device/ Onboard LAN2 Device

Use this item to enable or disable onboard LAN device.

Azalia

Use this item to control the detection of the Azalia HD Audio device.

The optional settings are: [Disabled]; [Enabled];[Auto].
[Disabled]: Azalia will be unconditionally disabled;
[Enabled]: Azalia will be unconditionally enabled;
[Auto]: Azalia will be enabled if present, disabled otherwise.

Azalia Internal HDMI Codec
Use this item to enable or disable internal HDMI codec for Azalia.
The optional settings are: [Enabled]; [Disabled].

Restore AC Power Loss
Use this item to select AC power state when power is re-applied after a power failure.
The optional settings are: [Power Off]; [Power On]; [Last State].

System Agent (SA) Configuration
Press [Enter] to go for further settings:

Graphics Configuration
Press [Enter] to make further settings for Graphics Configuration.

Graphics Configuration

Primary Display
Use this item to select which of the IGFX/PCI-E graphics device should be the primary display.
The optional settings are: [Auto]; [IGFX]; [PCI-E].

Internal Graphics
The optional settings are: [Auto]; [Disabled]; [Enabled].

GTT Size
The optional settings are: [1MB]; [2MB].

Aperture Size
The optional settings are: [128MB]; [256MB]; [512MB].

DVMT Pre-Allocated
Use this item to select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.
The optional settings are: [32M]; [64M]; [128M]; [256M]; [512M]; [1024M].

DVMT Total Gfx Mem
Use this item to select DVMT 5.0 total graphics memory size used by the internal graphics device.

The optional settings are: [128M]; [256M]; [MAX].

LCD Control

Primary IGFX Boot Display

Use this item to select the video device which will be activated during POST. This has no effect if external graphics present. 'Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

The optional settings are: [VBIOS Default]; [CRT]; [HDMI]; [LVDS1].

When set as **[CRT]; [HDMI]; or **[LVDS1]**, the following sub-item shall appear:*

Secondary IGFX Boot Display

The optional settings are: [Disabled]; [CRT]; [HDMI]; [LVDS1].

Active LFP

The optional settings are: [Disabled]; [Enabled].

[Disable]: VBIOS does not enable LVDS.

[Enable]: VBIOS enable LVDS driver by integrated encoder.

LVDS1 Panel Type

Use this item to select LVDS panel resolution used by internal graphics device by selecting the appropriate setup item.

The optional setting are: [640 x 480]; [800 x 480]; [800x 600]; [1024 x 600]; [1024 x 768]; [1280 x 800]; [1280 x 1024]; [1366 x 768]; [1440 x 900]; [1400 x 1050]; [1600 x 900]; [1600 x 1200]; [1680 x 1050]; [1920 x 1080]; [1920 x 1200]; [2048 x 1536].

Backlight Control

The optional settings are: [PWM Inverted]; [PWM Normal].

Panel Color Depth

Use this item to select the LVDS Panel Color Depth.

The optional settings are: [18 Bit]; [24 Bit].

Memory Configuration

Press [Enter] to view current memory configuration, or make settings for the following sub-items:

DIMM profile

Use this item to select DIMM timing profile that should be used.

The optional settings are: [Default DIMM profile]; [Custom profile].

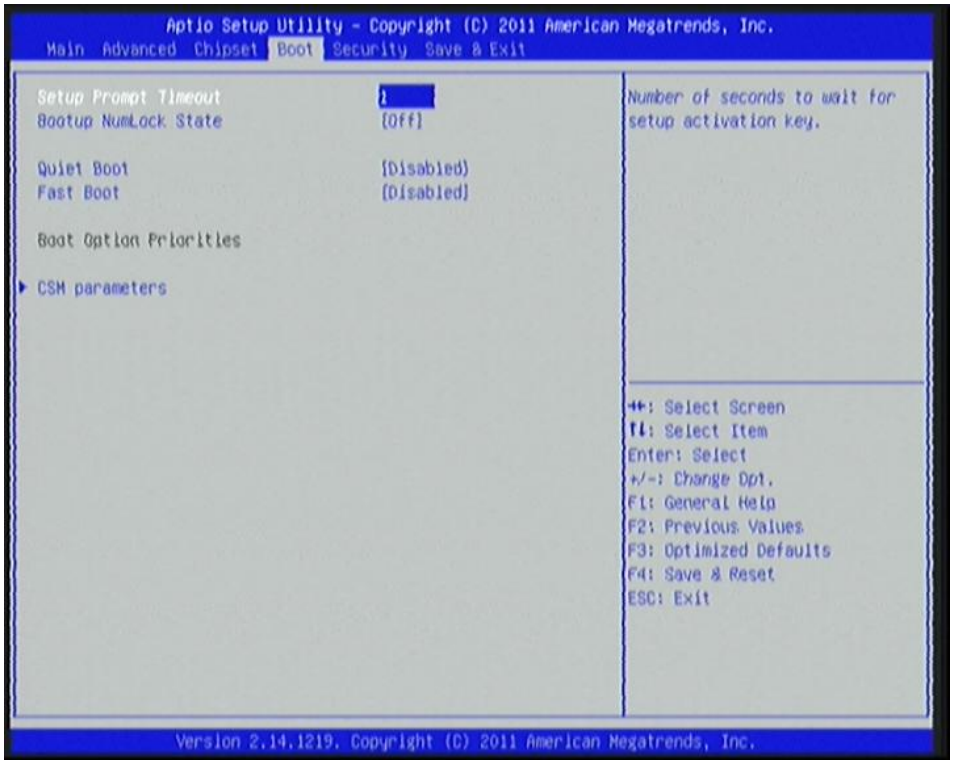
Memory Frequency Limiter
Use this item to set maximum memory frequency selection in Mhz.
The optional settings are: [Auto]; [1067]; [1333].
***Note:** This option is only available for settings when '**DIMM Profile**' is set as [**Default DIMM profile**].*

Custom Profile Control
User can press [Enter] to make customized settings for 'DIMM Profile'.
***Note:** This option is only available for settings when '**DIMM Profile**' is set as [**Custom profile**].*

NMode Support
The optional settings are: [Auto]; [1N Mode]; [2N Mode].

Memory Remap
Use this item to enable or disable memory remap above 4G.
The optional settings are: [Enabled]; [Disabled].

3-9 Boot Menu



Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

Bootup Numlock State

Use this item to select keyboard numlock state.

The optional settings are: [On]; [Off].

Quiet Boot

The optional settings are: [Enabled]; [Disabled].

Fast Boot

The optional settings are: [Enabled]; [Disabled].

When set as [Enabled], user can make settings in the following items that appear:

VGA Support

The optional settings are: [Auto]; [EFI Driver].

*When set as [Enabled], it will only install Legacy OpROM with Legacy OS and logo will not be shown during POST. EFI driver will still be installed with EFI OS.

USB Support

The optional settings are: [Disabled]; [Full Initial]; [Partial Initial].

PS2 Device Support

The optional settings are: [Disabled]; [Enabled].

The PS2 devices will be skipped if this is set as [Disabled].

Network Stack Driver Support

The optional settings are: [Disabled]; [Enabled].

Network Stack Driver will be skipped if this is set as [Disabled].

Boot Option Priorities

Boot Option #1/ Boot Option #2/…

Use this item to decide system boot order from available options.

CSM parameters

Press [Enter] to make settings for the following sub-items:

Boot option filter

This option controls what device system can boot to.

The optional settings are: [UEFI and Legacy]; [Legacy only]; [UEFI only].

Launch PXE OpROM Policy

This option controls the execution of UEFI and Legacy PXE OpROM.

The optional settings are: [Do not launch];[UEFI only]; [Legacy only]; [Legacy first];[UEFI first].

Launch Storage OpROM policy

This option controls the execution of UEFI and Legacy Storage OpROM.

The optional settings are: [Do not launch];[UEFI only]; [Legacy only]; [Legacy first];[UEFI first].

Launch Video OpROM policy

This option controls the execution of UEFI and Legacy Video OpROM.

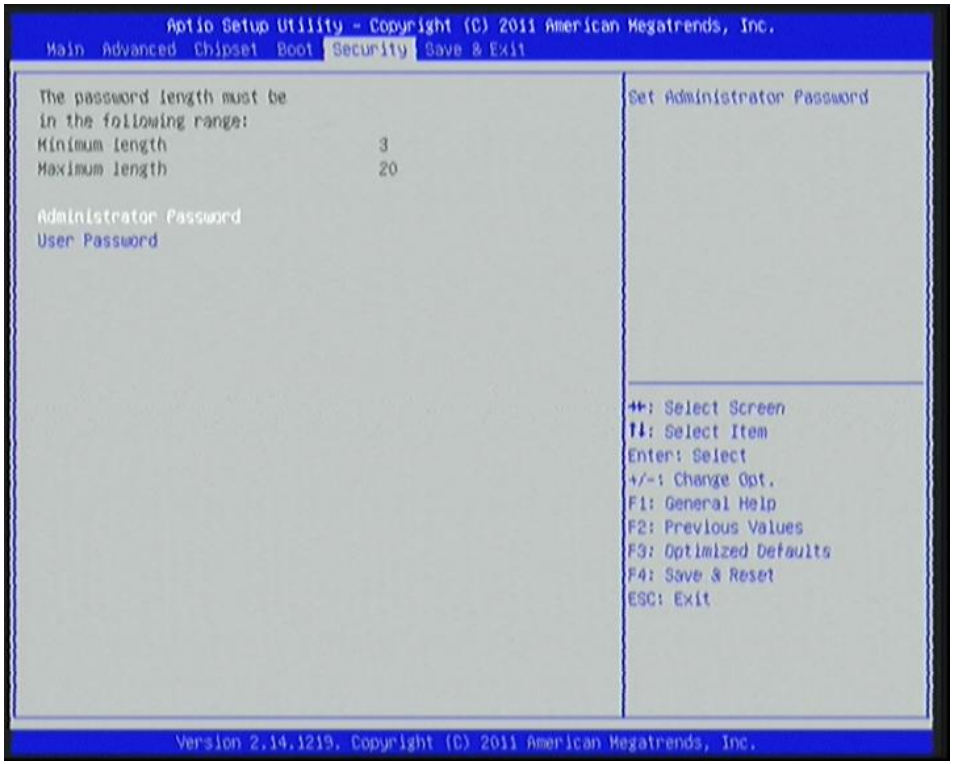
The optional settings are: [Do not launch];[UEFI only]; [Legacy only]; [Legacy first];[UEFI first].

Other PCI device ROM priority

This item is for PCI devices other than Network, Mass storage or video defines

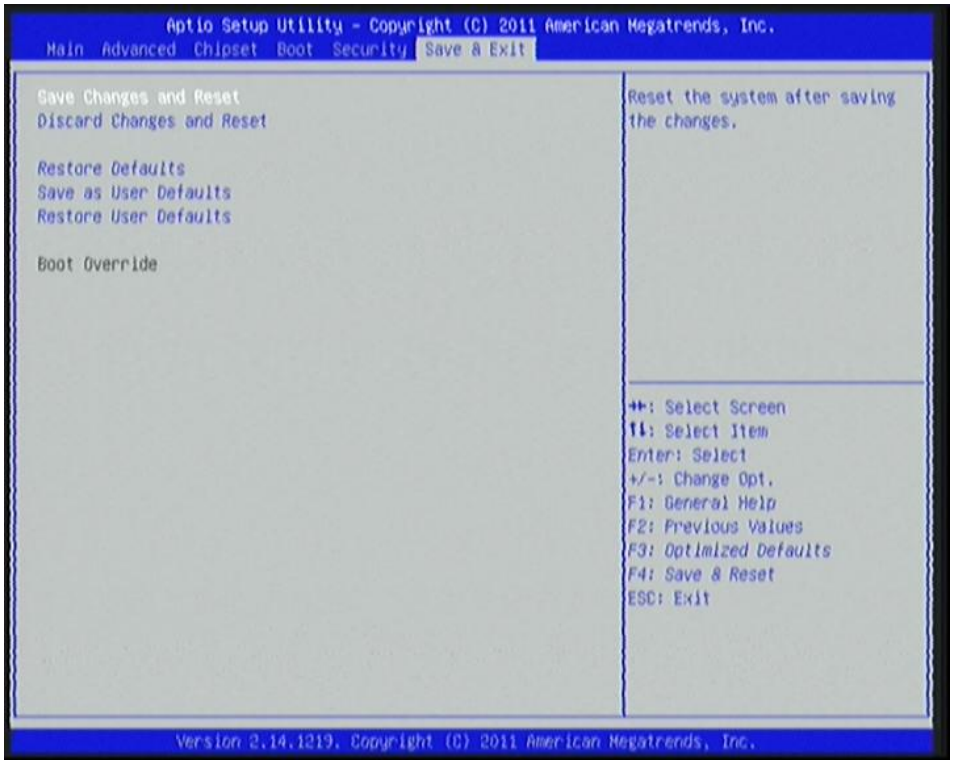
which OpROM to launch.
The optional settings are: [UEFI OpROM]; [Legacy OpROM].

3-10 Security Menu



Administrator Password
This item allows user to set administrator password.
User Password
This item allows user to set user password.

3-11 Save & Exit Menu


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Reset
Discard Changes and Reset
Restore Defaults
Save as User Defaults
Restore User Defaults
Boot Override
Reset the system after saving the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Save Changes and Exit
This item allows user to exit the system after saving the changes.
Discard Changes and Exit
This item allows user to exit the system without saving any changes.
Restore Defaults
Use this item to restore /load default values for all the setup options.
Save as User Defaults
Use this item to save the changes done so far as user defaults.
Restore User Defaults
Use this item to restore defaults to all the setup options.